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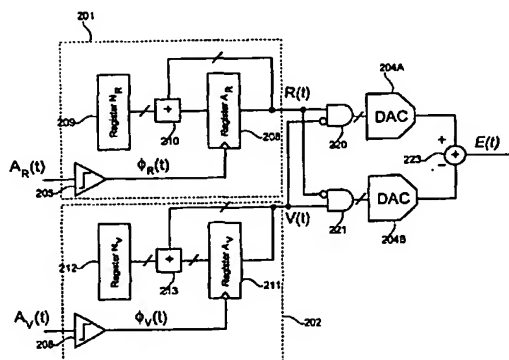
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(54) Title: PHASE-LOCKED LOOP-WITH-INCREMENTAL PHASE DETECTORS AND A CONVERTER FOR COMBINING  
A LOGICAL OPERATION WITH A DIGITAL TO ANALOG CONVERSION



(57) Abstract: The invention relates to a phase-locked loop comprising a voltage controlled oscillator and having a frequency control input for controlling the frequency of the output signal. The phase-locked loop also has a phase comparator for deriving a control signal from a phase error detected in response to a received output signal and a reference signal. The control signal is coupled to the frequency control input of said voltage controlled oscillator. The phase comparator includes a first and a second predefined phase step value to a first accumulated phase value, and the phase comparator has means for determining the phase error. The phase comparator may further have circuit means for performing a first and a second AND operation on the outputs from the first and second accumulators and for obtaining analogue signals corresponding to the outputs of the AND operations. The invention also relates to a method for obtaining information on a phase error between two signals. The invention also relates to a phase comparator for use in a phase-locked loop. The invention further relates to a digital to analogue converter, which converter may combine a logic operation with a digital to analogue conversion.

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